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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,020	12/01/2003	Patricia A. Miller	03-0640.01	2594
21491	7590	05/04/2005	EXAMINER	
LANIER FORD SHAVER & PAYNE			LAI, ANNE VIET NGA	
P O BOX 2087			ART UNIT	PAPER NUMBER
HUNTSVILLE, AL 35804			2636	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/725,020	Applicant(s) MILLER, PATRICIA A.	
	Examiner Anne V. Lai	Art Unit 2636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-26, 28-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Schmidt et al** [US. 5,479,150] in view of **Zufelt et al** [US. 5,446,448].

In claim 1, **Schmidt et al** disclose a bridge damage detection system comprising a pair of first and second current conductors 4 running along both side of the bridge and forming a closed circuit to a control panel; plural junction boxes (slip connector 14; fig. 1; col. 3, lines 45-61) for joining plural sections of conductor pair 4; the control panel provides electrical current on the first conductor, monitors the second conductor for an expected return electrical current and activates a notification device upon failing to detect the expected return current (fig. 3; claim 1).

Schmidt et al disclose the conductors form a current loop the whole length of the bridge; **Zufelt et al** teach a monitoring arrangement for detecting breakage of a structure comprising a pair of conductors of specific length having a junction at their first end and forming a current loop on a particular section of the structure for detecting the breakage of that particular section (21-22 at mid-section, 23-24 at far-section; fig. 1; col. 2, line 24 through col. 3, line 21). It would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the teaching of **Zufelt et**

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al to the monitoring arrangement of **Schmidt et al** for the convenient of the user to run the conductors pair along any particular section of the bridge for detecting the damage at that particular section.

In claim 2, **Schmidt et al** disclose a solid conduit 5; a wire conductor (jumper 8) at expansion joint 3 is not shown having a conduit however it would have been obvious a flexible conduit can be implement based on designer choice to protect the jumper from damaging by weather or collision (figs. 1 and 3).

In claim 4, **Zufelt et al** teach the conductors are from about sixteen to twenty-two gauge wire (col. 2, lines 41-42); therefore the 18 gauge copper wire may be selected based on designer choice.

In claims 5-20, **Schmidt et al** disclose visual alarm (col. 3, lines 62-67), **Zufelt et al** teach telecommunication (telephone, radio, cellular, satellite) from the control panel to notify a central processor of a damage upon failing to detect the return current on the second conductor (col. 4, lines 28-36); therefore it would have been obvious to one has ordinary skill in the art, the implement of various communication systems is based designer choice for effectively transmit the alarm to appropriate users, communities or central processors.

In claims 21-25, **Zufelt et al** teach a plurality of pair of conductors can be used for detecting damage of the structure at different sections (21-22 at med-section, 23-24 at far-section; fig. 1; col. 3, lines 1-21); therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply Zufelt

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teaching to Schmidt's system for detecting bridge damage at different sections based on designer choice.

In claims 26 and 28-42, the combined **Schmidt et al** and **Zufelt et al** disclose a method and a system for monitoring a spanning structure for damage as claimed for the same reasons as stated above.

3. Claims 3 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Schmidt et al** and **Zufelt et al** in view of **Hartmann** [US. 3,477,019].

In claims 3 and 27, **Schmidt et al** and **Zufelt et al** do not specify the junction box comprises a resistor; **Hartmann** teaches a closed loop rupture detection strip for detecting earth movement comprising a resistor (23, 23') at the junction for coupling the first end of a first conductor and the first end of a second conductor (21, 22; fig. 2-11) to provide indication of location of the break. It would have been obvious any conductor has at least a resistance value (a resistance at the junction of Schmidt et al and Zufelt et al is inherent); and a resistor can be placed at the junction as designer choice to detect the breakage section of a structure as taught by **Hartmann**.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Grauman discloses a system and method for ice movement detection and determination of ice breakup. [US. 4,680,961]

Wilson discloses a double-detecting type alarm system. [US. 4,079,363]

Simpson discloses an annunciator alarm control device. [US. 6,084,509]

Holst discloses a safety device for indicating shifting of a structure. [US. 2,689,341]

Galvin discloses a two-wire multi-zone alarm system. [US. 4,491,828]

Israel discloses a modular security system. [US. 4,746,909]

Cummings et al disclose a network security system. [US. 5,406,260]

Sasagawa discloses an antitheft security tag. [US. 5,689,237]

Spooner discloses a temperature responsive signaling and locating system comprising junction box connection. [US. 32,581,213]

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne V. Lai whose telephone number is 571-272-2974. The examiner can normally be reached on 8:00 am to 5:30 pm, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hofsass Jeffery can be reached on 571-272-2981. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

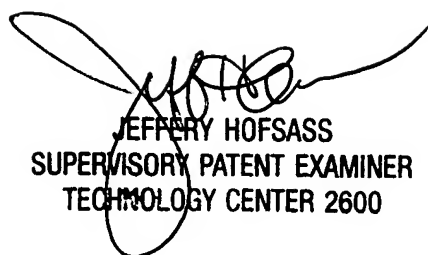
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A. V. Lai

April 22, 2005



JEFFERY HOFSSASS
SUPERVISORY PATENT EXAMINER
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